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Supplemental Material

Assessment of the Probability of Autochthonous Transmission of Chikungunya Virus in Canada under Recent and Projected Climate Change

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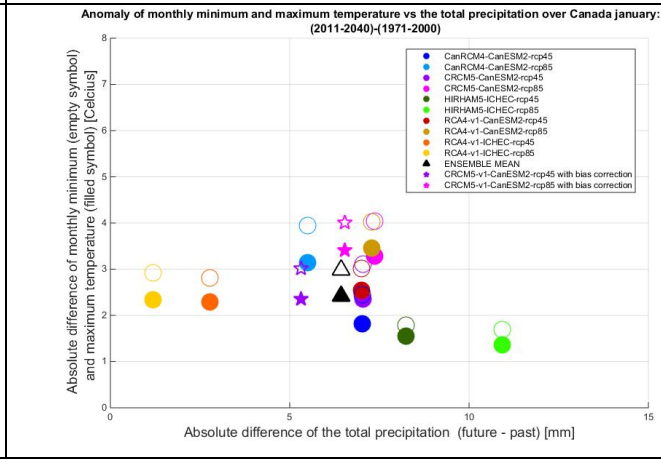
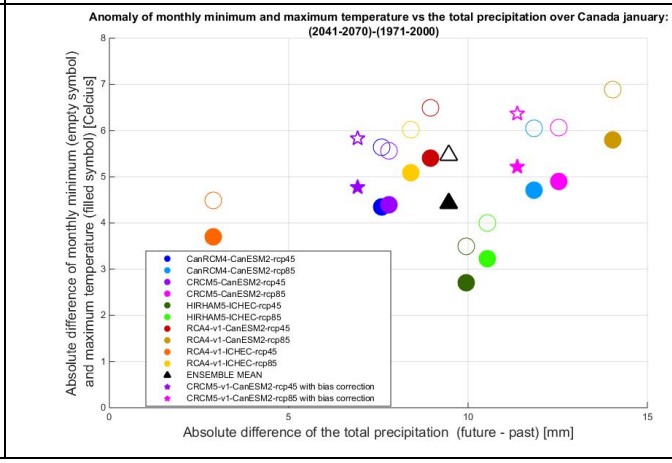
Figure S6 Duration in months for potential autochthonous CHIKV transmission in Canada combining the climatic suitability for CHIKV transmission potential (R_0) with the climatic suitability for the presence of *Ae. albopictus* (SIG index) using the 75^{th} percentile value of R_0 distributed across temperature range 10°C to 40°C as the cut-off.

Figure S1 Comparison between the bias-corrected data from CRCM5-CanESM2-RCP4.5 and CRCM5-CanESM2-RCP8.5 with data from other RCMs and their ensemble mean.

The figures in Figure S1 show the monthly mean of climate change for one month in winter (January) and the three summer months (June, July and August). We used two distinct future period (2011-2040) and (2041-2070) with respect to the historical reference period (1971-2000). The y-axis is for temperature and x-axis for total precipitation. For each RCM, climate change signal is computed by making the absolute difference between the future and the current climatological mean.

Filled circle symbols represent maximum temperature and hollowed circle symbols represent minimum temperature. The black triangle represents the ensemble RCM mean. The star symbols represent the climate change signal calculated with CRCM5 driven both by CanESM2-RCP4.5 and CanESM2-RCP8.5 with bias correction (corrected using the Linear Scaling approach). The Linear Scaling approach adjusts RCM time series with correction values based on the relationship between long-term mean monthly observed values (30-year climatological data over the period 1976-2015) and RCM control run values. This control run corresponds to the CRCM5 model driven by CanESM2 global climate model.

	2011-2040	2041-2070
January		

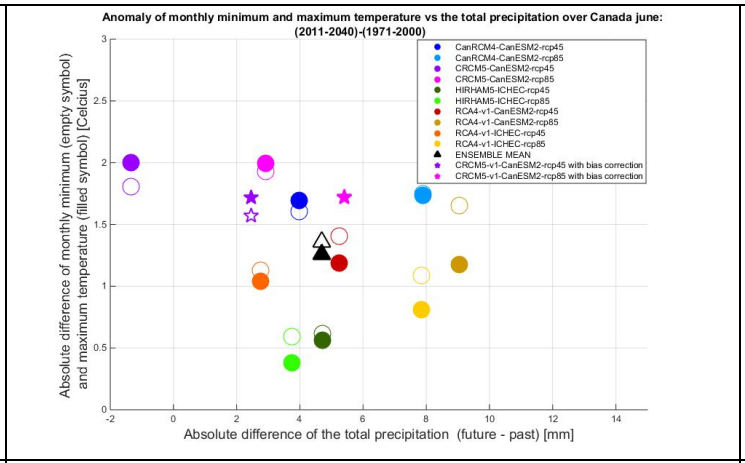
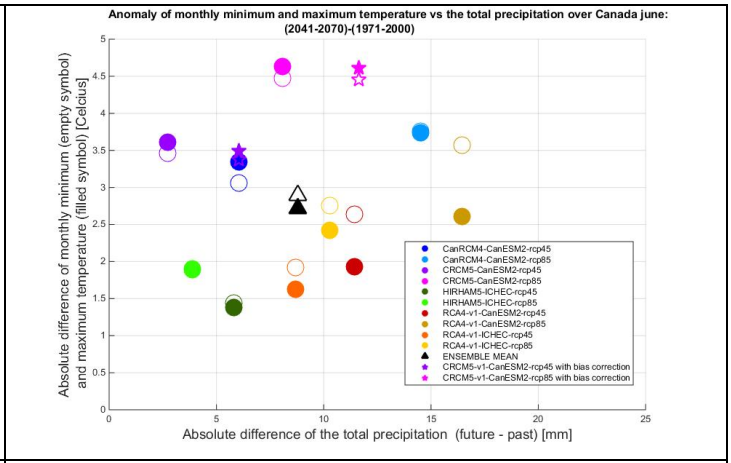
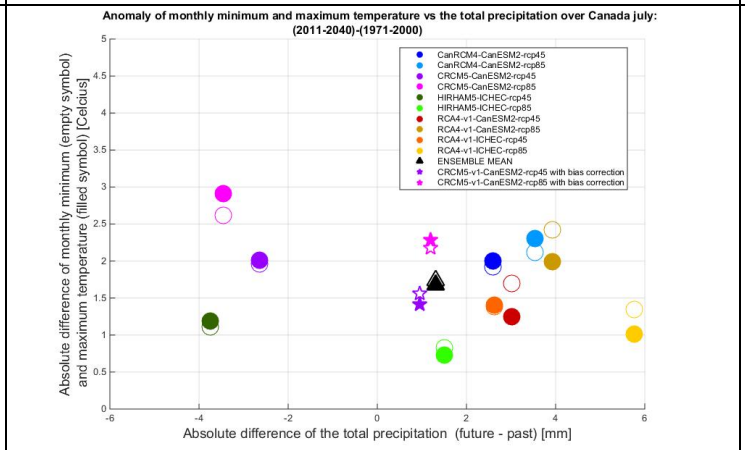
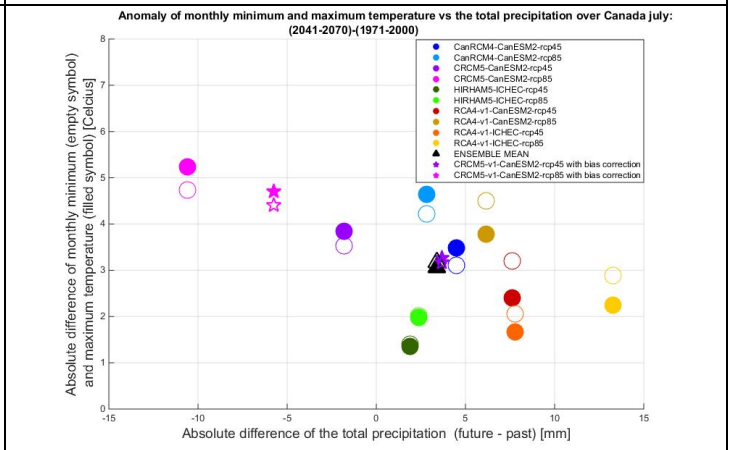
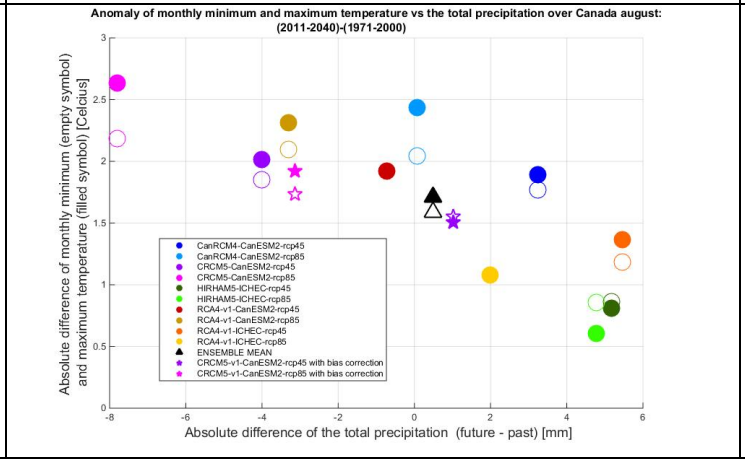
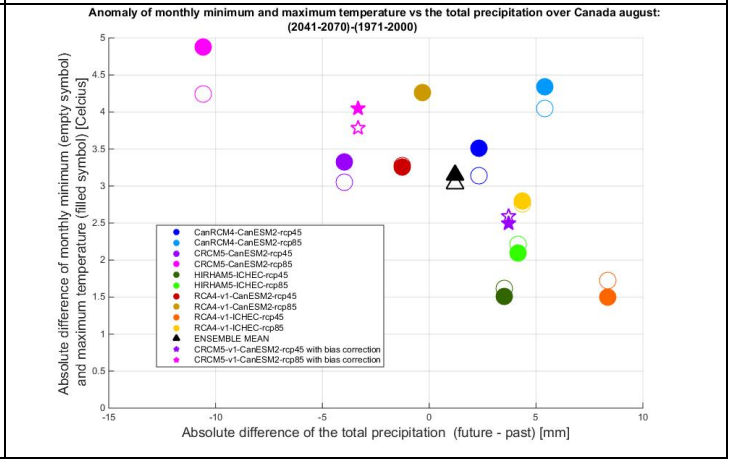
June		
July		
August		

Figure S2 Risk categories for autochthonous CHIKV transmission by *Ae. albopictus* in Canada derived from combining the climatic suitability for CHIKV transmission potential (R_0) with the climatic suitability for the presence of *Ae. albopictus* (SIG index) using the 75th percentile value of R_0 distributed across temperature range 10°C to 40°C as the cut-off.

CHIKV transmission potential (R_0)	R_0 cut-offs	Corresponding temperature	Climatic suitability for the presence of *Aedes albopictus* (SIG index)				
			Very unsuitable	Moderate	High	Very high	Totally suitable
			<66.7	≥66.7 - <75	≥75 - <85	≥85 - <95	≥95 - 100
	$R_0 \leq 0.5$	10°C to < 19.8°C and ≥36.5°C					
	$0.5 < R_0 \leq 0.7$	≥19.8°C to <20.7°C and ≥35.5°C to <36.5°C					
	$0.7 < R_0 \leq 0.9$	≥20.7°C to <21.5°C and ≥34.8°C to <35.5°C					
	$0.9 < R_0 \leq 1.0$	≥21.5°C to <21.8°C and ≥34.5 to <34.8°C					
	$R_0 > 1.0$	≥21.8°C to <34.5°C					
Overall CHIKV suitability risk categories			Unsuitable	Rather unsuitable	Partly suitable	Rather suitable	Suitable

Figure S3 Risk maps for autochthonous CHIKV transmission in Canada based solely on CHIKV transmission potential (R_0) using the 75th percentile value of R_0 distributed across temperature range of 10°C to 40°C as the cut-off.

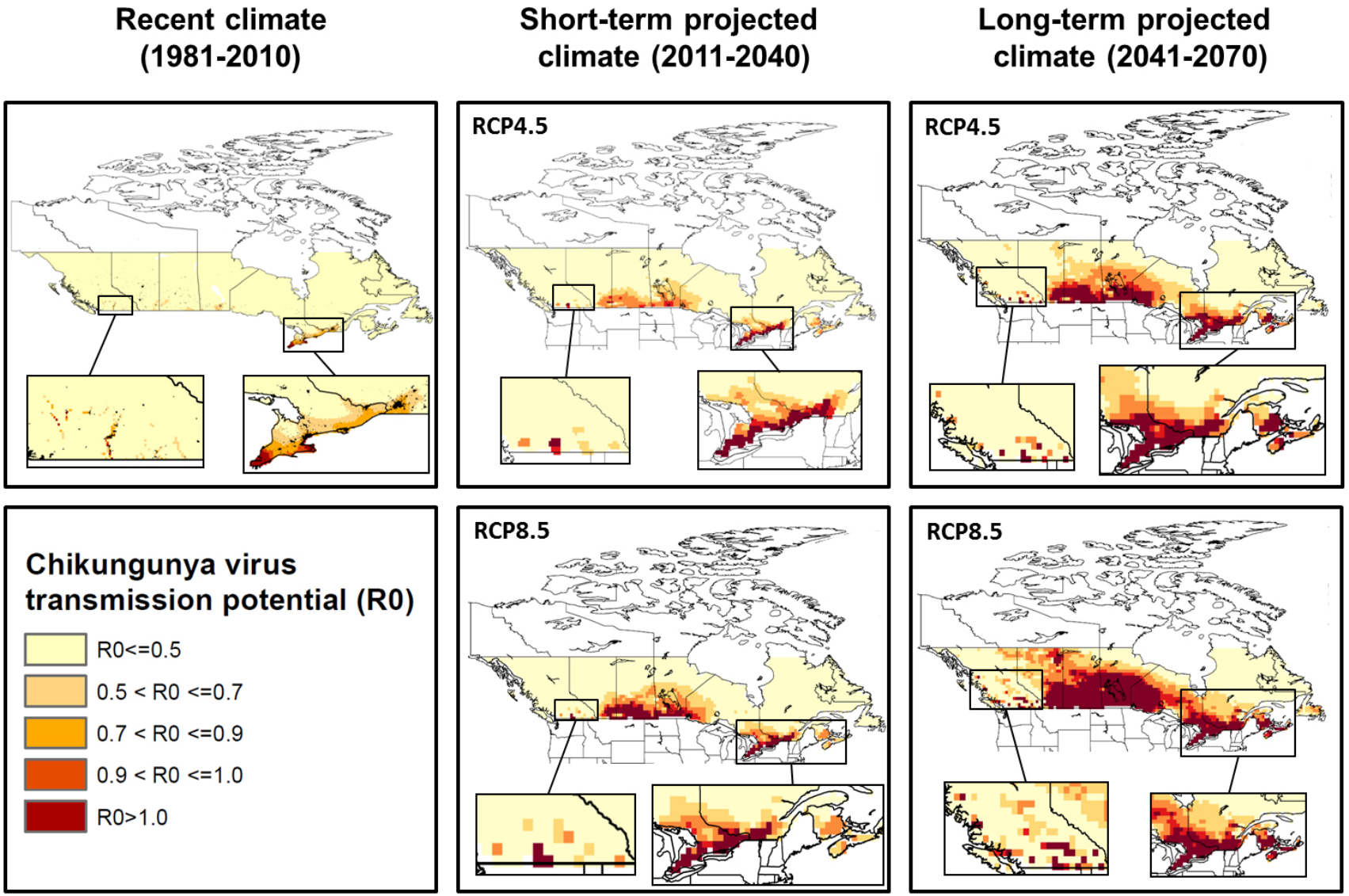
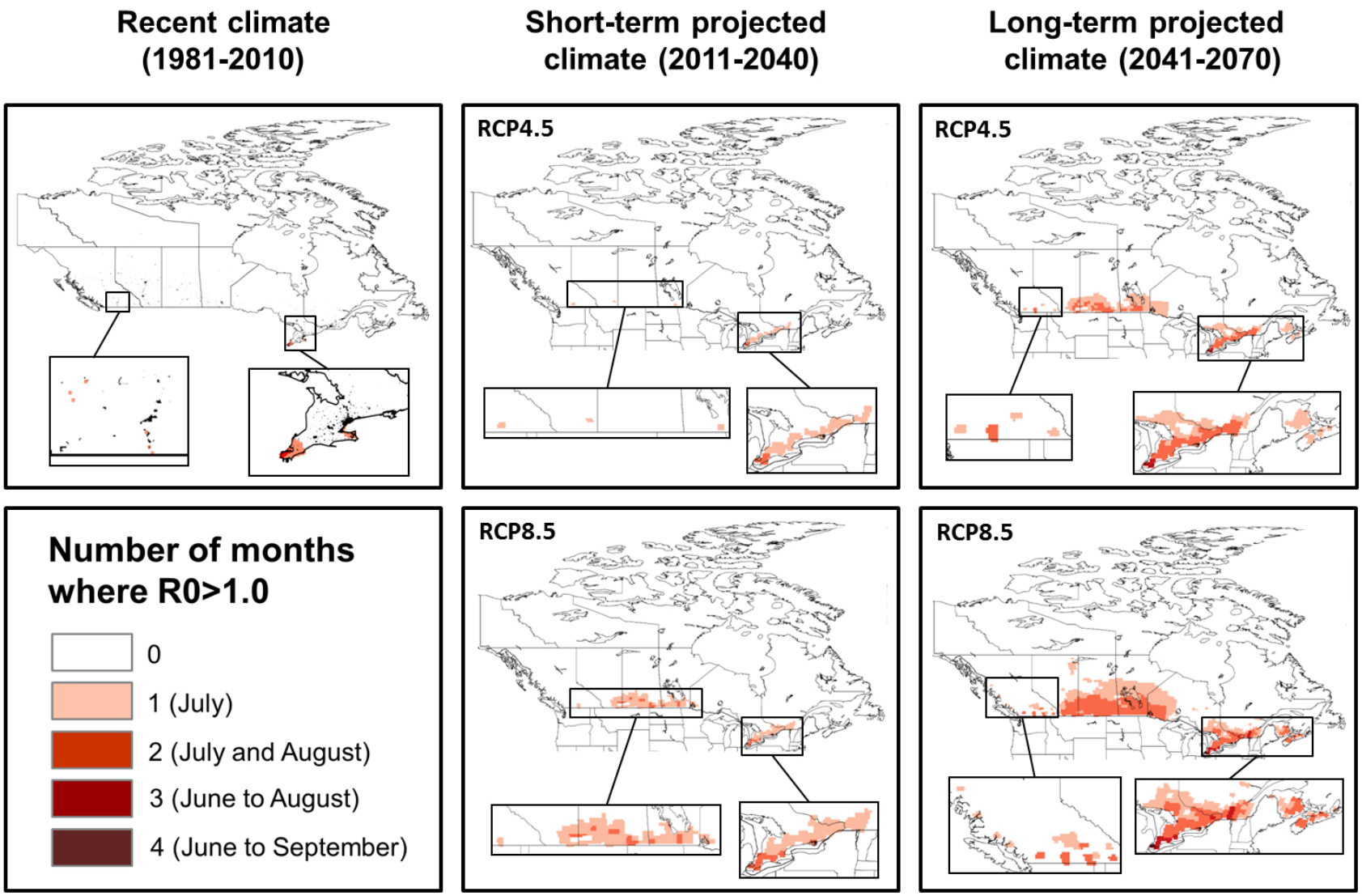


Figure S4 Duration in months where mean R_0 >1.0 (mean monthly temperature between ≥22.8°C and 33.6°C) in Canada based solely on CHIKV transmission potential (R_0) using the 75th percentile value of R_0 distributed across temperature range 10°C to 40°C as the cut-off.



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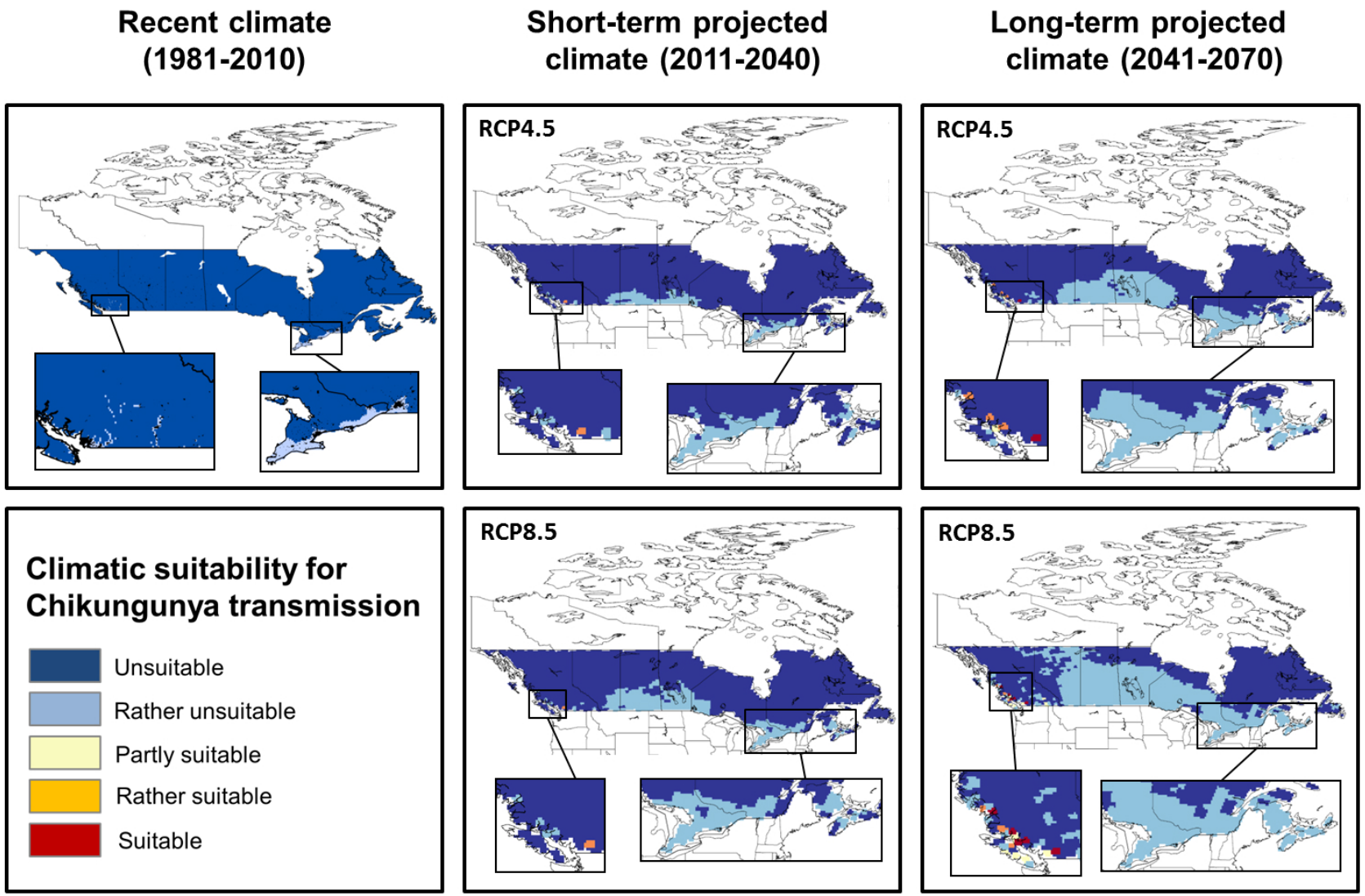

Figure S6 Duration in months for potential autochthonous CHIKV transmission in Canada combining the climatic suitability for CHIKV transmission potential (R_0) with the climatic suitability for the presence of *Ae. albopictus* (SIG index) using the 75th percentile value of R_0 distributed across temperature range 10°C to 40°C as the cut-off.